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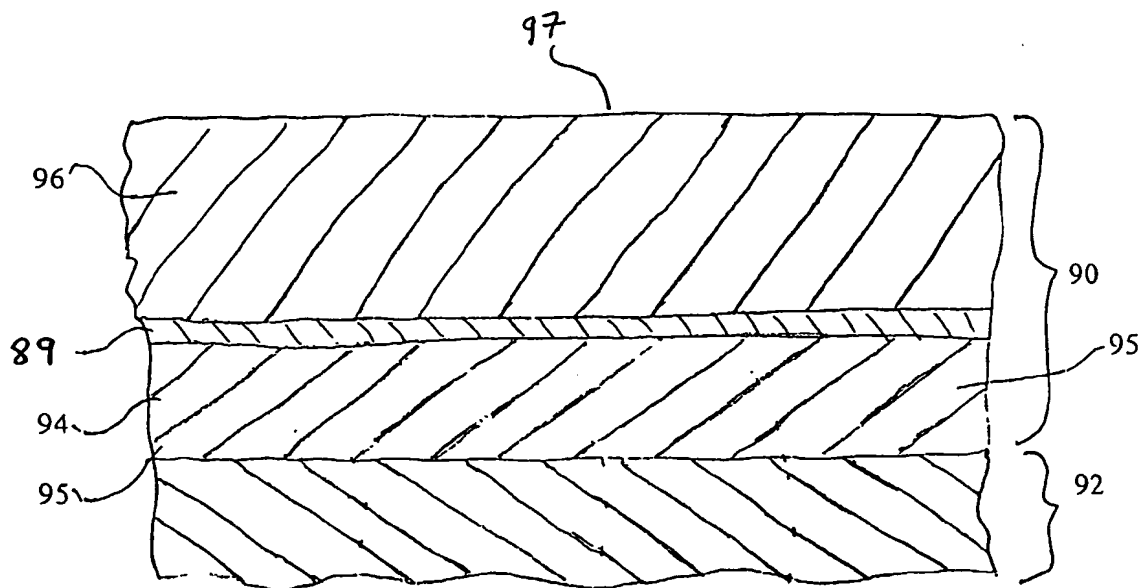
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[Continued on next page]

(54) Title: BOND COAT FOR A THERMAL BARRIER COATING SYSTEM AND RELATED METHOD THEREOF



(57) Abstract: Method and Apparatus for efficiently applying a bond coat (94) and related coating systems (90) to a surface that can survive the thermal gradient that is encountered in very high temperature, high heat flux environments such as a rocket engine. An apparatus for efficiently applying coating systems (90) using a vapor or cluster deposition technique such as a directed vapor deposition (DVD) approach, and more particularly providing a thermal barrier coating (TBC) system applications with very high temperature utility in either oxidizing or non-oxidizing conditions.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C23C 14/30

US CL : 427/596,255.23, 255.7, 454, 455, 456; 204/192.16, 192.22; 118/715, 723EB; 428/627, 632, 650, 653, 67

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 427/596,255.23, 255.7, 454, 455, 456; 204/192.16, 192.22; 118/715, 723EB; 428/627, 632, 650, 653, 678, 680

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	US 6,153,313 A (RIGNEY et al.) 28 November 2000 (29.11.2000), abstract, col. 5, lines 1-30, col. 5, line 64 to col. 6, line 12.	1, 2, 15, 16, 19, 25, 26, 29-31, 60, 62, 64, 68, 70-73 3-14, 17, 27, 61
X — Y	EP 0992614 A1 (CYBULSKY et al.) 12 April 2000 (12.04.2000) abstract, paragraphs 0006, 0008, 0009.	15, 16, 19, 20, 62, 64, 65, 71-73 18, 63
X	US 5,236,787 A (GRASSI) 17 August 1993 (17.08.1993), col. 3, line 44 to col. 4, line 57.	21, 22, 24-26, 28, 29, 66-70
X	WO 97/40266 A2 (VOSS et al.) 30 October 1997 (30.10.1997) abstract, pages 12-13.	21, 22, 24-26, 28, 29, 66-70
X — Y	US 5,534,314 A (WADLEY et al.) 09 July 1996 (09.07.1996) abstract, col. 6, lines 7-15, col. 13, line 44 to col. 14, line 5.	30-59 3-11, 14, 17, 23, 27



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INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	WO 99/65626 (UNIVERSITY OF VIRGINIA PATENT FOUNDATION) 23 December 1999 (23.12.1999), abstract, pages, 9, 16-19.	30-59 3-11, 14, 17, 23, 27
P,X — P,Y	WO 03/028428 A2 (UNIVERSITY OF VIRGINIA PATENT FOUNDATION) 10 April 2003 (10.04.2003) abstract, pages 5-7.	30-59 3-11, 14, 17, 23, 27
Y	EP 1209321 A2 (GENERAL ELECTRIC COMPANY) 29 May 2002 (29.05.2002) abstract, paragraphs 0012, 0017.	12-14, 18, 24, 28, 61, 63, 66, 69
P,Y	US 2003/0129378 A1 (MOVCHAN et al.) 10 July 2003 (10.07.2003) abstract, paragraph 0022	12-14, 18, 24, 28, 61, 63, 66, 69